AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method comprising:

~~inserting a delay sequence of data values into an output data sequence of data values, a portion of the output data sequence following the delay sequence being the same as a corresponding portion of an input sequence of decoded data obtained from a speech decoder~~subjecting an input sequence of decoded data obtained from a speech decoder to a first delay, the input sequence having at least one distorted non-voice sequence representing a non-voice signal; and then

subjecting the input sequence of decoded data to a second delay that is longer than the first delay, in response to determining that a non-voice signal is likely to be encountered in a next frame of said decoded data; and then

inserting a substantially undistorted non-voice sequence into the output sequence in response to having identified the non-voice signal in said distorted sequence, the undistorted sequence being at least of substantially the same length as the distorted sequence, a portion of the output sequence following the undistorted sequence being the same as a corresponding portion of the input sequence, the output sequence being substantially free of the distorted non-voice sequence.

2. (Original) The method of claim 1 wherein the undistorted non-voice sequence comprises a sequence of dual tone multiple frequency (DTMF) signal values.

3. (Original) The method of claim 1 wherein the substantially undistorted non-voice sequence comprises a regenerated non-voice sequence that matches the non-voice signal.

4. (Original) The method of claim 1 further comprising processing the output sequence to identify the undistorted sequence as representing a DTMF digit.

5. (Original) A method comprising:

inserting a first delay sequence of data values into an output data sequence of data values, a portion of the output data sequence following the first delay sequence being the same as a corresponding portion of an input sequence of decoded data obtained from a decoder that operates according to a speech coding/decoding process, the input sequence having at least one distorted non-voice sequence representing a non-voice signal;

inserting a second delay sequence into the output data sequence in response to determining that the non-voice signal is likely to be in the input sequence, based on values associated with the input sequence and the speech coding/decoding process, a portion of the output data sequence prior to the second delay sequence being the same as a corresponding portion of the input sequence; and

inserting a substantially undistorted non-voice sequence into the output sequence following the second delay sequence, the undistorted sequence being at least of substantially the same length as the distorted sequence, a portion of the output sequence following the undistorted sequence being the same as a corresponding portion of the input sequence.

6. (Original) The method of claim 5 wherein the undistorted non-voice sequence comprises a sequence of dual tone multiple frequency (DTMF) signal values.

7. (Original) The method of claim 5 wherein the undistorted non-voice sequence comprises a regenerated non-voice sequence that matches the non-voice signal.

8. (Original) The method of claim 5 wherein the second delay sequence is longer in time than the first delay sequence.

9. (Original) The method of claim 5 wherein the values comprise

a plurality of linear prediction coding (LPC) parameters received by the decoder and associated with the input sequence.

10. (Original) The method of claim 5 further comprising

processing the output sequence to identify the undistorted sequence as representing a DTMF digit.

11. (Currently Amended) An apparatus comprising:

buffer having an input to receive a sequence of decoded data having a non-voice signal and speech therein and a first buffer output that provides the decoded data in a first in first out manner, wherein the buffer comprises a first FIFO buffer portion and a second FIFO buffer portion in series therewith that receive the decoded data;

signal processor having an input to receive the decoded data and a processor output that provides a sequence of regenerated data representing a regenerated non-voice signal, the processor generates ~~an A~~a select signal in response to identifying the non-voice signal in the sequence of decoded data; ~~and~~

first multiplexer ~~A~~ having a first input coupled to the first buffer output to receive the decoded data, a second input coupled to the processor output to receive the regenerated data, and a first multiplexer ~~A~~ output that provides data from the second input in response to the ~~A~~ select signal;

predictor that determines whether a non-voice signal is likely to be in the sequence of decoded data based on values associated with the sequence of decoded data and representing characteristics of a speech coding/decoding process used to generate the decoded data; and

second multiplexer having a first input coupled to receive the sequence of decoded data, a second input coupled to an output of the second buffer portion, and an output coupled to the first input of the first multiplexer, the second multiplexer provides data at its output from its second input in response to a select signal from the predictor.

12. (Original) The apparatus of claim 11 wherein the non-voice signal comprises a tone signal.

13. (Original) The apparatus of claim 11 wherein the regenerated non-voice signal matches the non-voice signal.

14. (Cancelled)

15. (Currently Amended) A repeater comprising:

means for storing an input sequence of decoded data having a non-voice signal and speech therein, in a first in first out manner, wherein the non-voice signal and speech have been processed in accordance with a speech coding/decoding process;

means for providing a sequence of regenerated data representing a regenerated non-voice signal matching said non-voice signal;

means for providing an output sequence being a delayed version of the input sequence; ~~and~~

means for providing the sequence of regenerated data as part of the output sequence in response to identifying the non-voice signal in the input sequence; and

means for inserting a further delay sequence into the output data sequence, in response to determining that a non-voice signal is likely to be in the input sequence based on values associated with the input sequence and the speech coding/decoding process.

16. (Cancelled)

17. (Original) The repeater of claim 15 wherein the non-voice signal comprises a DTMF signal.

18. (Original) The repeater of claim 15 wherein the values representing characteristics of the speech coding process comprise linear prediction coding (LPC) parameters.

19. (Original) The repeater of claim 15 further comprising means for decoding a plurality of encoded packets into said sequence of decoded data according to a speech coding/decoding process.

Claims 20-23 (Cancelled)

24. (New) A method comprising:

subjecting an input sequence of decoded data to a first delay, the input sequence having at least one distorted non-voice sequence representing a non-voice signal; and then

subjecting the input sequence of decoded data to a second delay that is longer than the first delay, in response to determining that a non-voice signal is likely to be encountered in a next frame of said decoded data; and then

subjecting the input sequence back to the first delay in response to detecting no non-voice signals during a given time interval in which the input sequence is subjected to the longer, second delay.

25. (New) The method of claim 24 wherein the non-voice signals are DTMF signals.

26. (New) The method of claim 25 wherein the first delay is no more than two frames long and the second delay is no more than five frames long, each frame to contain about ten (10) msec of decoded audio data.

27. (New) The method of claim 25 wherein the given time interval is at most two frames long, each frame to contain about ten (10) msec of decoded audio data.

28. (New) An article of manufacture comprising:

a machine-readable medium having data stored therein which, when accessed by a processor, processes a sequence of input data that has been obtained from a coding/decoding process to determine whether any non-voice signal is likely to be in the sequence of input data; and,

if it has been determined that a non-voice signal is likely, starts to process the sequence to identify any non-voice signal therein; and,

while processing the sequence to identify any non-voice signal, if no non-voice signal is identified after having processed a predetermined amount of said input data in the sequence, then stops said processing to identify, but if a non-voice signal is identified then undistorted data representing the identified non-voice signal is generated to substantially replace a portion of the sequence of input data that contains a distorted non-voice signal.

29. (New) The article of manufacture of claim 28 wherein the medium has data that inserts a first delay interval into a sequence of output data that is otherwise

substantially the same as the sequence of input data, while performing said processing to determine whether any non-voice signal is likely; and

inserts a further delay interval into a path taken by the sequence of input data to yield the sequence of output data, while performing said processing to identify any voice signal.

30. (New) The article of manufacture of claim 28 wherein said data is to treat the non-voice signals as DTMF signals.

31. (New) The article of manufacture of claim 30 wherein the data is to treat the input data as having been obtained from a speech coding/decoding process that codes speech at 8 kbit/sec or less.

32. (New) The article of manufacture of claim 29 wherein the medium includes data that removes said further delay interval from the path taken by the sequence of input data if no non-voice signal is identified after having processed the predetermined amount of said input data.